

SPECIFICATION AMENDMENTS

Page 11, between lines 34 and 36, after the description of Figure 3, please insert:

Figure 4 is a schematic view of the production steps.

Page 11, line 36 to page 12, line 24 please replace the paragraph with the following amended paragraph:

According to ~~figure 1~~ Figures 1 and 2, a portion of an assay chip 2 is shown to illustrate the biological function of a membrane protein 3. This assay chip 2 is the essential pre-requisite for the investigation of binding activities of the membrane proteins 3 which now combines both, the advantages of the supported 4 and of the free standing lipid bilayer membrane 5 as discussed above. The assay chip 2 comprises an array substrate 28 and a 300 nm thick silicon nitride layer 6 having sections in form of arrays 7 of pores 8 of diameters in the range of 50 nm and 2 μm .

Page 14, line 18 to line 27 please replace the paragraph with the following amended paragraph:

Figure 2 depicts in a schematic way the design of a assay chip 2 which comprises in this embodiment ~~a array~~ an assay substrate 28 of 100 mm^2 total area having a 300 nm thin silicon nitride layer 6 with the actual nanopore array 7. The size of the silicon nitride membrane section 29 having the actual nanopore arrays 7 is about 1 mm^2 . A nanopore array section 7 of 400 x 400 μm comprises nanopores 8 having diameters in the range of 50 to 2000 nm (indicated at 30). The distance of the nanopores 8

to each other (the pitch) is chosen to be in the range of their diameter ~~34~~
30.

Page 15, line 27 to line 34 please replace the paragraph with the following
amended paragraph:

Figure 3 schematically shows a process for manufacturing the nanopores
in order to achieve a chip 32 comprising the substrate 28 and the support
layer 6 with the nanopores 8, as set forth in Figure 2. First, the nanopores 8
are replicated by hot embossing technique: As seen in Figure 4, a stamp
33 (~~FIG. 3A~~) is pressed into PMMA 34 (molecular weight 25 kg/mol) spin-
coated to a thickness of 330 nm on a Si₃N₄ (260 nm)/Si (300 to 360 μm)/
Si₃N₄ (260 nm)/Cr (40 nm) substrate 35.